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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,508	12/12/2000	Jurgen Zindel	514413-3852	8798

20999 7590 08/11/2004

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NEW YORK, NY 10151

EXAMINER
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BALASUBRAMANIAN, VENKATARAMAN

ART UNIT	PAPER NUMBER
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1624

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/719,508

Applicant(s)

ZINDEL ET AL.

Examiner

Venkataraman Balasubramanian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/26/2004 has been entered.

Claims 1-10 and 12-15 are now pending.

In view of applicants' response, the following apply:

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-10, and 12-15 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for chlorination of triazine compounds bearing R<sup>1</sup> as variously (un)substituted C<sub>1</sub>-C<sub>8</sub> alkyl or C<sub>3</sub>-C<sub>8</sub> cycloalkyl, does not reasonably provide enablement for alkenyl and alkynyl as substituents in the above said R<sup>1</sup> groups. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims for reasons of record.

The rejection is same as made in the previous office action. Applicants' argument to overcome this rejection is not persuasive.

First of all, applicants have merely argued without providing any factual evidence as to the scope of enablement issue raised by the examiner. As noted above examiner had applied Wands analysis for the basis for the rejection and have provided prior art evidence.

Secondly, the instant claims relates to process claims and that viability of the process in presence of the above said reactive groups is a limitation applicants are claiming but applicants' have not shown that, the above said groups are not susceptible to chlorination and if they react how to avoid such unwanted reaction.

Applicants have argued that the presence of alkenyl or alkynyl groups in the compounds of formula II or desired compounds of formula I are not incompatible with inventive process but they have not offered any factual evidence. As seen from the prior art provided by the examiner, these groups are susceptible to chlorination.

The fact these groups also undergo chlorination leads to undue experimentation without adequate guidance in the specification.

In response, applicants argue that, citing *In re Staehelin v. Secher* 24 USPQ. 2d 1513, 1516 (Bd. Pat. App & Int. 1992), specification need be a blueprint in order to satisfy enablement requirement under 35 U.S.C. § 112.

Applicants should note that the issue is not blueprint issue as the above rejection is not a scope rejection. It is scope of enablement rejection.

In re Staehelin v. Secher states "Specification, in order to satisfy enablement requirement under 35 USC 112, first paragraph, need not be "blueprint" which, if followed, would unfailingly reproduce exactly applicant's claimed invention; rather, only objective enablement without resort to undue experimentation is required, and thus party in interference which claims that disclosure is non-enabling but which has failed to present persuasive, objective evidence that, at time invention was made, undue experimentation would have been required by those skilled in art in order to practice invention, has failed to meet its burden of making out prima facie case of non-enablement."

The case law is related to scope enablement not scope of enablement. The issue in the instant case is distinctly different.

Furthermore, the instant invention is not product claim but a process claim that too an alleged improved process over the prior art process. Thus there is no question of enablement as far as the alkyl or substituted alkylmercapto group without any other reactive group susceptible to chlorination.

Hence, the above case law is not to the point.

Contrary to applicants' urging, there is undue experimentation involved in establishing the viability of the process in presence of alkenyl and alkynyl groups stated in the rejection above. One trained in the art based on the prior knowledge that alkenyl and alkynyl undergo facile chlorination, need to do undue experimentation. He had to find out under what conditions the chlorination would proceed in presence of these reactive groups, even though the said groups do not appear in the final product,

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whether the intermediate chlorinated compound would undergo further chlorination and displace the said mercapto groups and if not what recourse one should take to get the desired product and so on. All these experimental conditions have to be established without any guidance or suggestion from the instant specification. These are trivial routine experimentation but need more inventive steps. If one trained in the art arrives at a solution to this said problem, how can it be deemed as applicants' invention?

Thus, the process of chlorination of alkenyl and alkynyl mercapto compounds would involve undue experimentation and it is not routine experimentation.

Applicants' also argue citing *In re Buchner* 929 F.2d 660, 661, 18 U.S.P.Q. 2d 1331, 1332 (Fed. Cir. 1991), that " Indeed a specification need not disclose- and best omits- that which is well known in the art."

This is clearly a misplaced argument.

First of all, what is well known in the art as pertinent to the instant application is:

- i) Chlorination of alkylmercapto bearing triazine results in the displacement of the said group by chlorine atom.
- ii) Chlorination of unsaturated groups namely alkenyl or alkynyl groups would lead to chlorinated products of these groups.

Cited prior art support these two facts.

- iii) What is not well known in the prior art is how to do the above said displacement of mercapto bearing alkenyl or alkynyl group to get corresponding chloro compound.

If applicants are asserting that such a process is well known in the prior art, then

they should in response to this office action provide such a reference.

Such a reference would clearly resolve the scope of enablement rejection.

Hence this rejection is proper and is maintained.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giencke et al. WO 97/08156 or Lorenz et al. US 6,069,114 in view of Chakrabarti et al., Tetrahedron, 31(16) 1879-1882, 1975 for reasons of record.

Applicants' traversal to overcome this rejection was not persuasive. As for applicants' traversal, the following apply.

**Applicants' argument**

" It is well-settled that there must be some prior art teaching which would have provided the necessary incentive or motivation for modifying the reference teachings. In re Laskowski, 12 U.S.P.Q. 2d 1397, 1399 (Fed. Cir. 1989); In re Obukowitz, 27 U.S.P.Q. 2d 1063 (BOPA1 1993).

**Examiner's rebuttal :**

Giencke et al. also teaches, to make 2-chloro-triazine, the chlorination of 2-alkylthio-triazine using various chlorinating agents including chlorine and phosphorous oxychloride, in inert organic solvent and suitable reaction temperature as shown on page 25, second paragraph.

Thus, **necessary incentive or motivation for modifying the reference teachings** requirement is clearly met with.

Lorenz et al. teaches, to make 2-chloro-triazine, the chlorination of 2-alkylthio-triazine (intermediate IV) using various chlorinating agents including chlorine and phosphorous oxychloride, in inert organic solvent and suitable reaction temperature as shown on col. 17 lines 37-42 and col. 18. 45-55.



Thus, **necessary incentive or motivation for modifying the reference teachings** requirement is clearly met with.

**Applicants' argument:**

Further, "obvious to try " is not the standard under 35 U.S.C. §103. In re Fine, 5 U.S.P.Q. 2d. 1596, 1 599 (Fcd. Cir. 1988). And, as stated by the Court in In re Fritch, f 23 U.S.P.Q. 2d. 1780,1 783- 1 784 (Fcd. Cir. 1992);

"The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggests the desirability of the modification."

**Examiner's rebuttal :**

Both Giencke et al. and Lorenz et al. **clearly teach that the alkylthio group can be replaced with chloro group.**

Therefore it is not "**obvious to try**" situation. The references clearly teach that 2-chloro compound can be obtained form 2-alkylthio-triazine.

There is no need for the examiner to suggest the chlorination process. It is there in the references.

Thus "**the prior art suggests the desirability of the modification.**" condition is also met with.

**Applicants' argument:**

Also, the Examiner is respectfully reminded that for the Section 103 rejection to be proper, both the suggestion of the claimed invention and the expectation of success

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must be founded in the prior art, and not Applicants' disclosure. In re Dow, 5 U.S.P.Q. 2d.1529, 1531 (Fed, Cir. 1988).

**Examiner's rebuttal :**

Again both the references teach the said chlorination process. There one trained in the art would be motivated to use the teaching and expect success.

Thus, the criteria **"the suggestion of the claimed invention and the expectation of success must be founded in the prior art,"** is also met with.

**Comparative Data:**

Applicants' argument was considered but persuasive.

Comparative data provided on page 17 cannot obviate the obviousness rejection stated above, as it is an improper comparison.

First of all, the comparative data relates to US 5,084,570 but that also in part. The prior art cited in the 103 rejection is not compared. Again in this regards, applicants' attention is drawn to MPEP 716.02(e) and MPEP 2145, which states the following:

**Comparison With Closest Prior Art**

An affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a prima facie case of obviousness. In re Burckel, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979). "A comparison of the claimed invention with the disclosure of each cited reference to determine the number of claim limitations in common with each reference, bearing in mind the relative

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importance of particular limitations, will usually yield the closest single prior art reference." In re Merchant, 575 F.2d 865, 868, 197 USPQ 785, 787 (CCPA 1978) (emphasis in original). Where the comparison is not identical with the reference disclosure, deviations therefrom should be explained, In re Finley, 174 F.2d 130, 81 USPQ 383 (CCPA 1949), and if not explained should be noted and evaluated, and if significant, explanation should be required. In re Armstrong, 280 F.2d 132, 126 USPQ 281 (CCPA 1960) (deviations from example were inconsequential).

Comparisons when they are two equally close prior art references

Showing unexpected results over one of two equally close prior art references will not rebut prima facie obviousness unless the teachings of the prior art references are sufficiently similar to each other that the testing of one showing unexpected results would provide the same information as to the other. In re Johnson, 747 F.2d 1456, 1461, 223 USPQ 1260, 1264 (Fed. Cir. 1984).

The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997).

Secondly, applicants have not offered any valid reasoning why it is necessary to use varying conditions in the comparative data. The comparative data shows in examples b-e, after initial passage of chlorine for 15 minutes, the reaction mixture is stirred for 1hr, while in the comparative example f, the reaction is worked up after 15 minutes. It is not clear why should one accept these variations as not relevant to the yield.

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Thirdly, both Giencke et al. and Lorenz et al. teach the following:

45 Intermediates of the formulae (IV) or (XII) in which R<sup>14</sup>  
is (C<sub>1</sub>-C<sub>4</sub>)alkylmercapto or unsubstituted or substituted  
phenyl-(C<sub>1</sub>-C<sub>4</sub>)alkylmercapto can be converted into more  
reactive chlorotriazines of the formula (IV) or (XII) in which  
R<sup>14</sup> is chlorine with a suitable chlorinating reagent, for  
50 example elemental chlorine or phosphorus oxychloride in an  
inert organic solvent, for example toluene, chlorobenzene,  
chlorinated hydrocarbons or others at temperatures between  
-40° C. and the boiling point of the solvent, preferably at  
20° C. to 80° C. (cf. J. K Chakrabarti, D. E. Tupper;  
55 Tetrahedron 1975, 31(16), 1879-1882).

Contrary to applicants urging, reagent for chlorination, organic solvent and temperature are clearly taught in these references.

Although applicants argue that solvent and temperature are the critical parameters, they have not shown any evidence to demonstrate that fact and have not provided any evidence that based on the teaching of the two references why optimizing these parameters an obvious variant.

Finally, applicants' have based their argument that the yield of Chakrabarti reference is low and that one trained in the art would not be motivated to transfer the condition to the chlorination of methylthio-aminotriazine compound.

This is incorrect.

Careful look at the process of Chakrabarti reference would show that 100 mg of alkythio-triazine upon chlorination gave 80 mg of the chloro compound in the free base form. The yield of the chlorination is indeed high. Hence one trained in the art would be motivated to transfer the process to analogous alkythio compound as clearly taught in Giencke et al. and Lorenz et al.

Hence this rejection is proper and is maintained.

**Conclusion**

Any inquiry concerning this communication from the examiner should be addressed to Venkataraman Balasubramanian (Bala) whose telephone number is (571) 272-0662. The examiner can normally be reached on Monday through Thursday from 8.00 AM to 6.00 PM. The Supervisory Patent Examiner (SPE) of the art unit 1624 is Mukund Shah whose telephone number is (571) 272-0674. If Applicants are unable to reach Mukund Shah within 24-hour period, they may contact James O. Wilson, Acting-SPE of art unit 1624 at 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

  
Venkataraman Balasubramanian

8/4/2004